

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-024424**Date Inspected:** 13-Jun-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Pat Swain and Steve Jensen**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** SAS Tower**Summary of Items Observed:**

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At Tower Shear Plate to Diaphragm Plate, elevation 9 meters;

At Tower Base Shear Plate (80mm) to Diaphragm Plate (45mm) weld joint #029 (2 of 8), this QA Inspector randomly observed ABF personnel Hua Qiang Hwang continuing to perform production 1G welding on the Partial Joint Penetration (PJP) of T-joint between the 80mm thick shear plate and 45mm thick diaphragm plate. The welder was using the dual shielded Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. This QA Inspector observed ABF personnel using Miller Proheat 35 Induction Heating System to preheat the plates being welded prior to and after welding. This QA Inspector observed QC Inspector Pat Swain using a Fluke infra red temperature gauge to verify the preheat temperature of more than 325°F. This QA Inspector performed a verification of the welding parameters and observed 280 amperes and 23.9 volts with a travel speed of 550 mm per minute with equivalent heat input of 0.73 Kj per mm. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-3160-1. During the shift, the welder has completed the PJP weld joint and right after the completion of the weld joint, ABF personnel were noted covering the weld with heater blanket in preparation for the three hours holding of preheat temperature of more than 325°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold the preheat that was programmed to shut off after three hours.

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## WELDING INSPECTION REPORT

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At Tower Base South Shaft, weld number W-045 of location 'H', ABF welder Han Wen Yu was observed 3G Shielded Metal Arc Welding (SMAW) welding cover repair on this Electro Slag Welding (ESW) welded T-joint. The welder was noted using 1/8" diameter E7018H4R electrode implementing Caltrans approved ABF-WPS-D15-1000 repair. The welder was noted preheating the excavated weld cover to more than 300 °F using propylene gas torch. Location of the repair being welded was noted at Y=7350mm to Y=7550mm. ABF QC Pat Swain was noted monitoring the parameters of the welder. At the end of the shift, repair welding of the weld cover mentioned above was completed.

At Tower South Shaft Splice #3 @Elevation 114 meters;

At South (C-D) corner, upper splice plate; This QA Inspector randomly observed ABF welding personnel Xiao Jian Wan continuing to perform production welding on the top half of the upper splice plate using the self shielded Flux Cored Arc Welding (FCAW) process with 1.8mm diameter E71T-8 wire electrode implementing Caltrans approved (WPS) ABF-WPS-D15-F2200-3. The welder was noted 3F (vertical) fillet welding the splice plate to interior corner closure plate of the tower shaft. This QA Inspector observed ABF personnel using a propylene gas torch to preheat the plates to be welded prior to welding. This QA Inspector observed QC Inspector Steve Jensen using a Fluke infra red temperature gauge to verify the preheat temperature of more than 300°F. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3. At the end of the shift, vertical fillet welding was still continuing and should remain tomorrow. ABF personnel were noted covering the weld with heater blanket in preparation for the three hours holding of preheat temperature of more than 300°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold the preheat that was programmed to shut off after three hours.

At Tower West Shaft Splice #3 @Elevation 114 meters;

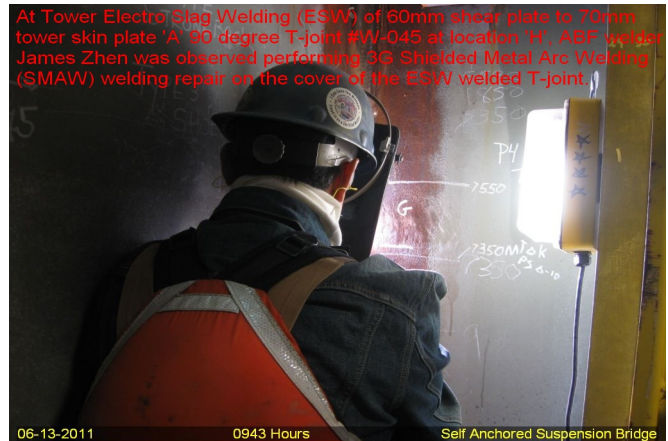
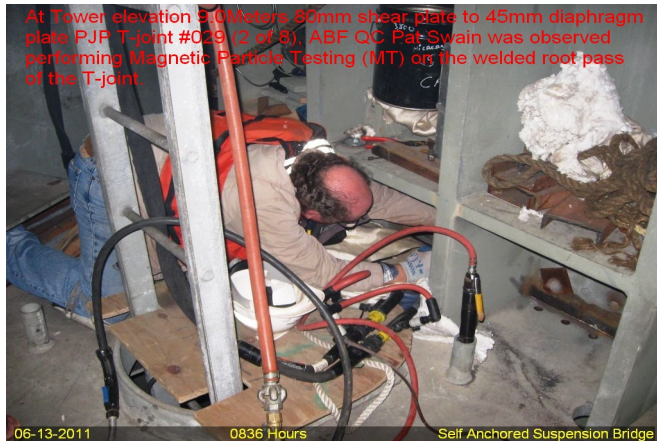
At West (B-C) corner, upper splice plate; This QA Inspector randomly observed ABF welding personnel Salvador Sandoval continuing to perform production welding on the bottom half of the upper splice plate using the self shielded Flux Cored Arc Welding (FCAW) process with 1.8mm diameter E71T-8 wire electrode implementing Caltrans approved (WPS) ABF-WPS-D15-F2200-3. The welder was noted 3F (vertical) fillet welding the splice plate to interior corner closure plate of the tower shaft. This QA Inspector observed ABF personnel using a propylene gas torch to preheat the plates to be welded prior to welding. This QA Inspector observed QC Inspector Steve Jensen using a Fluke infra red temperature gauge to verify the preheat temperature of more than 300°F. The welding appeared to comply with Welding Procedure Specification (WPS) ABF-WPS-D15-F2200-3. At the end of the shift, vertical fillet welding was still continuing and should remain tomorrow. ABF personnel were noted covering the weld with heater blanket in preparation for the three hours holding of preheat temperature of more than 300°F as required. ABF personnel were using Miller Proheat 35 Induction Heating System to hold the preheat that was programmed to shut off after three hours.

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# WELDING INSPECTION REPORT

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## Summary of Conversations:

No significant conversation occurred today.

## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

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**Inspected By:** Lizardo, Joselito

Quality Assurance Inspector

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**Reviewed By:** Levell, Bill

QA Reviewer